What is claimed is:

1. Wear resistant member, comprising:

a silicon nitride sintered body;

wherein the silicon nitride sintered body contains from 75 to 97% by mass of silicon nitride, from 0.2 to 5% by mass of particles of titanium nitride of which long axis is 1 μm or less and from 2 to 20% by mass of a grain boundary phase substantially containing Si-R-Al-O-N compound (here, R expresses one of rare earth elements).

2. The wear resistant member as set forth in claim 1:

wherein the particles of titanium nitride each are singly particle dispersed in the silicon nitride sintered body.

3. The wear resistant member as set forth in claim 1:

wherein the titanium nitride is not dissolved in the silicon nitride and the grain boundary phase as a solid solution.

4. The wear resistant member as set forth in claim 1:

wherein the particles of titanium nitride each are particle dispersed in the grain boundary phase.

5. The wear resistant member as set forth in claim 1:

wherein the particles of titanium nitride contain 80% by volume or more of particles of which aspect ratio is in the range of from 1.0 to 1.2.

6. The wear resistant member as set forth in claim 1:

wherein the particles of titanium nitride each are 0.2 μm or less in difference of long and short axes.

7. The wear resistant member as set forth in claim 1:

wherein the particles of titanium nitride each have a roundish shape.

8. The wear resistant member as set forth in claim 1: wherein the silicon nitride sintered body is 0.5% or less in porosity and 2μm or less in maximum pore diameter.

9. The wear resistant member as set forth in claim 1: wherein the silicon nitride sintered body is 1000MPa or more in three point flexural strength and 6.5MPa$\cdot m^{1/2}$ or more in fracture toughness.

10. The wear resistant member as set forth in claim 1: wherein, by the use of a thrust bearing testing machine, under the conditions of opponent material of SUJ2 steel ball provided by JIS G4805, load of 39.2MPa, and a number of rotation of 1200rpm, when rolling fatigue life is measured until a surface of the wear resistant member is peeled off, the wear resistant member has the rolling fatigue life of 1×10^8 times or more by a number of repetition.

11. The wear resistant member as set forth in claim 1: wherein the wear resistant member comprises ball member.

12. The wear resistant member as set forth in claim 11:

wherein the ball member is 200MPa or more in crushing strength and 6.5MPa$\cdot m^{1/2}$ or more in fracture toughness.

13. The wear resistant member as set forth in claim 11:

wherein, by the use of a thrust bearing testing machine, under the conditions of opponent material of SUJ2 steel plane table provided by JIS G4805, a maximum contact stress of

5.9GPa a ball, and a number of rotation of 1200rpm, when rolling fatigue life is measured until a surface of the ball member is peeled off, the ball member has the rolling fatigue life of 400 hr or more.

14. The wear resistant member as set forth in claim 1: wherein the grain boundary phase contains from 0.5 to 10% by mass of a rare earth element in terms of oxide, from 0.1 to 5% by mass of aluminum oxide and 5% by mass or less of aluminum nitride.

15. The wear resistant member as set forth in claim 1: wherein the silicon nitride sintered body contains at least one of element selected from magnesium, zirconium, hafnium and tungsten in the range of from 0.1 to 5 % by mass in terms of oxide.

16. The wear resistant member as set forth in claim 1: wherein the wear resistant member is rolling bearing member.

17. A method of manufacturing wear resistant member comprising silicon nitride sintered body, comprising the steps of:

adding, to silicon nitride powder that contains oxygen by 1.7% by mass or less and α-silicon nitride by 90% by mass or more and of which average particle diameter is 1.0μm or less, from 0.5 to 10% by mass of a rare earth compound in terms of oxide, from 0.1 to 5% by mass of titanium nitride of which average particle diameter is 0.7μm or less or a titanium compound that converts into titanium nitride due to the sintering in terms of titanium nitride, from 0.1 to 5% by

mass of aluminum oxide and 5% by mass or less of aluminum nitride are added to prepare a mixture of raw materials;

molding the mixture of raw materials into a desired shape;

heat treating, after degreasing the molded body obtained in the step of molding, at a temperature in the range of from 1300 to 1450°C; and

sintering the molded body undergone the heat treatment at a temperature in the range of from 1600 to 1900°C to prepare the silicon nitride sintered body.

18. The method of manufacturing wear resistant member as set forth in claim 17:

wherein, to the silicon nitride powder, the titanium nitride or the titanium compound that converts into titanium nitride due to the sintering is added divided into a plurality of portions to mix.

19. The method of manufacturing wear resistant member as set forth in claim 17:

wherein the mixture of raw materials contains titanium oxide powder of an average particle diameter of 0.5μm or less in the range of from 0.1 to 5% by mass in terms of titanium nitride.

20. The method of manufacturing wear resistant member as set forth in claim 17, further comprising a step of:

implementing HIP treatment under a pressure of 300atm or more in a non-oxidizing atmosphere at a temperature in the range of from 1600 to 1850°C.